

described in, for example, the following U.S. patents and publications incorporated herein by reference: U.S. Patent No. 4,752,455 to Mayer, U.S. Patent No. 4,895,735 to Cook, U.S. Patent No. 5,725,706 to Thoma et al., U.S. Patent No. 5,292,559 to Joyce Jr. et al., U.S. Patent No. 5,492,861 to Opower, U.S. Patent No. 5,725,914 to Opower, U.S. Patent No. 5,736,464 to Opower, U.S. Patent No. 4,970,196 to Kim et al., U.S. Patent No. 5,173,441 to Yu et al., and Bohandy et al., "Metal Deposition from a Supported Metal Film Using an Excimer Laser, J. Appl. Phys. 60 (4) 15 August 1986, pp 1538-1539. Because the film material is vaporized by the action of the laser, laser induced forward transfer is inherently a homogeneous, pyrolytic technique and typically cannot be used to deposit complex crystalline, multi-component materials or materials that have a crystallization temperature well above room temperature because the resulting deposited material will be a weakly adherent amorphous coating. Moreover, because the material to be transferred is vaporized, it becomes more reactive and can more easily become degraded, oxidized or contaminated. The method is not well suited for the transfer of organic materials, since many organic materials are fragile and thermally labile and can be irreversibly damaged during deposition. Moreover, functional groups on an organic polymer can be irreversibly damaged by direct exposure to laser energy. Other disadvantages of the laser induced forward transfer technique include poor uniformity, morphology, adhesion, and resolution. Further, because of the high temperatures involved in the process, there is a danger of ablation or sputtering of the support, which can cause the incorporation of impurities in the material that is deposited on the receiving substrate. Another disadvantage of laser induced forward transfer is that it typically requires that the coating of the material to be transferred be a thin coating,

A1
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A1 cont
generally less than 1 μm thick. Because of this requirement, it is very time-consuming to transfer more than very small amounts of material. --

Please replace the paragraph beginning at page 5, line 2, with the following rewritten paragraph:

A3
-- Therefore, there is a strong need for devices and methods for transferring materials for uses such as in electronic devices, sensing devices or passivation coatings in such a way that desired properties of the materials are preserved or enhanced. For example, there is a need for a method to transfer powders or particulate materials so that they retain their bulk properties. With respect to novel materials such as organic polymers that are incorporated into electronic devices, there is a need for a method to transfer these materials in such a way that their structural and chemical integrity is retained. --

Please replace the paragraph beginning at page 5, line 20, with the following rewritten paragraph:

A4
-- It is a further object of the present invention to provide a device and method for depositing a material on a substrate by laser induced deposition wherein the spatial resolution of the deposited material can be as small as 1 μm . --

Please replace the paragraph beginning at page 6, line 3, with the following rewritten paragraph:

A5
-- It is an object of the present invention to provide equipment and a method for creating an electronic device, sensor, or passivation coating by depositing a material on a substrate in a controlled manner wherein the process can be computer-controlled. --

Please replace the paragraph beginning at page 6, line 6 with the following rewritten paragraph:

A6 -- It is an object of the present invention to provide equipment and a method for creating an electronic device, sensor or passivation coating by depositing a material on a substrate in a controlled manner wherein it is possible to switch rapidly between different materials to be deposited on the substrate. --

Please replace the paragraph beginning at page 16, line 9, with the following rewritten paragraph:

A7 -- Specific polymeric matrix materials include, but are not limited to, the following: polyacrylic acid -butyl ester, nitrocellulose, poly(methacrylic acid)-methyl ester (PMMA), poly(methacrylic acid)-n butyl ester (PBMA), poly(methacrylic acid)-t butyl ester (PtBMA), polytetrafluoroethylene (PTFE), polyperfluoropropylene, poly N-vinyl carbazole, poly(methyl isopropenyl ketone), poly alphasethyl styrene, polyacrylic acid, polyvinylacetate, polyvinylacetate with zincbromide present, poly(oxymethylene), phenol-formaldehyde positive photoresist resins and photobleachable aromatic dyes. --

Please replace the paragraph beginning at page 21, line 20, with the following rewritten paragraph:

A8 -- The apparatus of the present invention can also be adapted so that an entire pattern of transfer material is deposited simultaneously on a patterned substrate. --